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Cruise Report

Cooperative Survey on the Connecticut River
with U.S.G.S. Water Resources Division
Small Sparker

Research Vessel - WRD 17' Whaler

June 16 and 17, 1982

G. B. Tirey
U.S. Geological Survey
Office of Marine Geology
Woods Hole, MA 02543

Research Vessel: 17' Whaler belonging to the Water Resources Division

Cruise Number: 17' Whaler--1

Cruise Dates: June 16 and 17, 1982

Area of Study: Connecticut River between Southampton and North Hadley, Mass.

Base of Operation: State Park at Southampton

Scientific Objectives:

1. Delineate the depth to the top of bedrock below the river surface.
2. Determine the location and dimensions of aquifers that transect the river.

Personnel: Bruce Hansen, USGS - WRD
Pete Haeni, USGS - WRD
David Nichols, USGS
Rusty Tirey, USGS
David McKeegan, USGS - WRD

Instrumentation:

25-joule Innerspace pressurized sparker, Innerspace hydrophone array, Innerspace seismic amplifier, Krohn-Kite band pass filter, EPC recorder, and Honda generator.

Operational Procedure:

Spark source and array were towed 50 feet astern of the whaler. Navigation was provided by visual sights on known land marks.

Results:

The data quality were good to excellent over about 75 percent of the track run. Data from the other 25 percent of the track were poor with limited or no penetration of the subbottom. This lack of penetration of the bottom by the acoustic energy is attributed to biogenic gas bubbles in the near surface sediments.

All of the data from this survey was retained by the personnel from the Water Resources Division.